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State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-488-4

Relating to Exemptions Under Section 27156  
of the Vehicle Code

Magnuson Products, Inc.  
Radix Supercharger Kit

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39515 and Section 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the installation of the Radix Supercharger Kit manufactured and marketed by Magnuson Products, Inc. of 3172 Bunsen Avenue, Unit K, Ventura, CA 93003, has been found not to reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for the 4.8L, 5.3L, and 6.0L General Motors vehicles listed in Exhibit A.

The Radix Supercharger Kit includes the following main components: Eaton supercharger, intake manifold plenum, larger fuel injectors, air intake box and filter, air-to-water intercooler, and new fuel and ignition timing map calibrations. The stock fuel injectors are replaced while still maintaining the air-fuel ratio close to stoichiometric using the new fuel and timing calibrations. The stock fuel pressure regulator is retained, but the stock fuel pump is complemented with a fuel pump voltage booster. The throttle body is moved to the supercharger inlet. All other emission-related components are in the stock location relative to the throttle body. The supercharger pulley specifications range between 3.0" to 3.7" depending on the engine displacement for which the kit is installed. All crankshaft pulleys are stock and maximum boost is limited to 7 psi.

This Executive Order shall not apply to any Radix Supercharger Kit advertised, offered for sale, sold with, or installed on a new motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

This Executive Order is valid provided that the installation instructions for the Radix Supercharger Kit will not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the devices, as exempted by the Air Resources Board (ARB), that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of these devices using any identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the ARB.

This Executive Order does not constitute any opinion as to the effect that the use of these devices may have on any warranty either expressed or implied by the vehicle manufacturer.

This exemption is issued based on submitted emissions test data from an independent laboratory on a 2003 model year General Motors Silverado 2WD vehicle (Test Group 3GMXT05.3176) certified to the Ultra Low Emission Vehicle (ULEV) and Supplemental Federal Test Procedure (SFTP) standards:

Federal Test Procedure:

	<u>NMOG</u>	<u>CO</u>	<u>NOX</u>	<u>HCHO</u>
Standards (g/mi)	0.100	4.4	0.4	0.009
Device (g/mi) with df's applied	0.074	1.7	0.2	0.002

SFTP (US06 Cycle):

	<u>NMHC+NOX</u>	<u>CO</u>
Standards (g/mi)	0.40	10.5
Device (g/mi)	0.08	3.6

SFTP (SC03 Alternative Cycle):

	<u>NMHC+NOX</u>	<u>CO</u>
Standards (g/mi)	0.31	3.5
Device (g/mi)	0.06	0.1

Test results showed that the Radix Supercharger Kit when installed on the vehicle did not cause exhaust emissions to exceed the applicable emission standards during the Cold Start CVS-75 Federal Test Procedure or SFTP cycles. This Executive Order is also based on the On-Board Diagnostic II (OBD II) testing conducted on the same test vehicle. Although the evaporative system readiness indicator failed to set during initial tests, no diagnostic trouble codes were logged during testing. In addition, further OBD II tests performed after the replacement of the vehicle's evaporative canister showed that the evaporative system readiness indicator set both before and after the installation of the supercharger kit. Therefore, the Radix Supercharger Kit

when installed on the test vehicle did not affect the vehicle's ability to perform its OBD II monitoring. However, the ARB reserves the right to monitor this issue and conduct additional OBD II system tests in the future. If such test results demonstrate that the Radix Supercharger Kit is adversely affecting emissions or the OBD II system, this Executive Order shall be effectively rescinded as of the date the test results are validated.

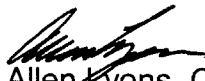
In addition, the ARB reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE RADIX SUPERCHARGER KIT.

No claims of any kind, such as "Approved by the Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after a ten day written notice of intention to revoke the order, in which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request and the order may not be revoked until a determination is made after the hearing that grounds for revocation exist.

Executed at El Monte, California, this 28<sup>th</sup> day of July 2003.

  
Allen Lyons, Chief  
Mobile Source Operations Division

## Exhibit A

(E.O.# D-488-4)

S/C SYSTEM PART NUMBER	S/C SYSTEM DESCRIPTION	APPLICATION
01-12-60-001	RADIX TRUCK, SILVER	ANY GM TRUCK AND SUV LISTED BELOW
01-12-60-002	RADIX TRUCK, POLISH	ANY GM TRUCK AND SUV LISTED BELOW
01-12-60-013	RADIX H2, SILVER	H2 ONLY
01-12-60-014	RADIX H2, POLISH	H2 ONLY
01-12-60-016	RADIX FLEX FUEL, SILVER (NO INJ/W/FUELREG)	ANY GM LISTED BELOW WITH VIN#8-Z
01-12-60-017	RADIX FLEX FUEL, POLISH (NO INJ/W/FUELREG)	ANY GM LISTED BELOW WITH VIN#8-Z

Year	Make	Model	Model	Engine	Pulley Dia.	Pulley P/N	Add Early Model Kit? 31-12-00-007	Tuner P/N
1999	Chevrolet	C/K	Silverado 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
1999	GMC	C/K	Sierra 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
2000	Chevrolet	C/K	Silverado 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-001
2000	Chevrolet	C/K	Tahoe	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
2000	Chevrolet	C/K	Suburban 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-001
2000	GMC	C/K	Sierra 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-001
2000	GMC	C/K	Yukon	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
2000	GMC	C/K	Yukon XL 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-001
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-001
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-001
2000	GMC	C/K	Denali	6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-001
2000	Cadillac		Escalade	6.0 - LQ9	3.3	58-90-06-033	yes	88-85-53-001
2001	Chevrolet	C/K	Silverado 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2001	Chevrolet	C/K	Tahoe	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-003
2001	Chevrolet	C/K	Suburban 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2001	GMC	C/K	Sierra 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2001	GMC	C/K	Yukon	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-003
2001	GMC	C/K	Yukon XL 1500/2500	4.8 - LR4	3.7	58-90-06-037	yes	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	yes	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2001	GMC	C/K	Denali	6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2001	Cadillac		Escalade	6.0 - LQ9	3.3	58-90-06-033	yes	88-85-53-003
2002	Chevrolet	C/K	Silverado 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003

**Exhibit A**  
(E.O.# D-488-4)

Year	Make	Model	Model	Engine	Pulley Dia.	Pulley P/N	Add Early Model Kit? 31-12-00-007	Tuner P/N
2002	Chevrolet	C/K	Tahoe	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
2002	Chevrolet	C/K	Suburban 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2002	Chevrolet	C/K	Avalanche 1500	5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
2002	GMC	C/K	Sierra 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2002	GMC	C/K	Yukon	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
2002	GMC	C/K	Yukon XL 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2002	GMC	C/K	Denali	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-003
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-003
				6.0 - LQ4	3.1	58-90-06-131	yes	88-85-53-003
2002	Cadillac		Escalade	6.0 - LQ9	3.3	58-90-06-033	yes	88-85-53-003
2002	Cadillac		Escalade EXT	6.0 - LQ9	3.3	58-90-06-033	yes	88-85-53-003
2003	Chevrolet	C/K	Silverado 1500/2500 and HD Series	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
				6.0 - LQ4	3.1	58-90-06-131	no	88-85-53-002
2003	Chevrolet	C/K	Tahoe	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
2003	Chevrolet	C/K	Suburban 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
				6.0 - LQ4	3.1	58-90-06-131	no	88-85-53-002
2003	Chevrolet	C/K	Avalanche 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
				6.0 - LQ4	3.1	58-90-06-131	no	88-85-53-002
2003	Chevrolet		SSR	5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
2003	Chevrolet		Trailblazer XL	5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
2003	GMC	C/K	Sierra 1500/2500 and HD Series	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
				6.0 - LQ4	3.1	58-90-06-131	no	88-85-53-002
2003	GMC	C/K	Yukon	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
2003	GMC	C/K	Yukon XL 1500/2500	4.8 - LR4	3.7	58-90-06-037	no	88-85-53-002
				5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
				6.0 - LQ4	3.1	58-90-06-131	no	88-85-53-002
2003	GMC	C/K	Envoy XL	5.3 - LM7	3.4	58-90-06-039	no	88-85-53-002
2003	GMC	C/K	Denali	6.0 - LQ4	3.1	58-90-06-131	no	88-85-53-002
2003	Cadillac		Escalade	6.0 - LQ9	3.3	58-90-06-033	no	88-85-53-002
2003	Cadillac		Escalade EXT	6.0 - LQ9	3.3	58-90-06-033	no	88-85-53-002
2003	Cadillac		Escalade ESV	6.0 - LQ9	3.3	58-90-06-033	no	88-85-53-002
2003	Hummer		H2	6.0 - LQ4	3.1	Don't Add to S/O	no	88-85-53-002